Original Article

# Neonatal sepsis in mother-child dyad of ethnic minority: a case study

## Sepsis neonatal em díade mãe-filho de minoria étnica: estudo de caso

## Sepsis neonatal en el binomio madre-hijo de minoría étnica: estudio de caso

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## Abstract

**Objective:** This paper aimed to describe the nursing diagnoses and interventions in the mother-child dyad consistent with the neonatal sepsis situation by applying the NANDA-I taxonomy.

**Methods:** This is a case study research, conducted with a newborn hospitalized at 72 hours of life in a neonatology service and with his mother who followed him up during hospitalization. Data collected in December 2017. Ethical principles have been observed.

**Results:** The dyad lives in the social condition of an ethnic minority, drawing attention to fragile social contexts in the area of mother and child. Sociodemographic data show poor housing, family planning, prenatal surveillance and gender roles. The initial nursing assessment was based on seven diagnoses. In children: 1) ineffective breathing pattern (0032); 2) risk for unstable blood glucose level (00179); 3) neonatal jaundice (00194); 4) risk of poor fluid volume (00028). In mothers: 1) ineffective health control (00078); 2) interrupted breastfeeding (00105); 3) willingness for improved decision-making (00184). Expected outcomes and successful nursing interventions were defined. The dyad was discharged at ten days of hospitalization.

**Conclusion:** Social inclusion and ethnic minority care programs may decrease maternal and child morbidity.

## Resumo

**Objetivo:** Este trabalho objetivou descrever os diagnósticos e as intervenções de enfermagem na díade mãe-filho coerentes com a situação sepsis neonatal aplicando-se a taxonomia NANDA-I.

**Métodos:** trata-se de uma pesquisa do tipo de estudo de caso, realizada com recém-nascido internado às 72h de vida em serviço de neonatologia e com sua mãe que o acompanhou durante o internamento. Dados recolhidos em dezembro 2017. Os princípios éticos foram acautelados.

**Resultados:** A díade vive em condição social de minoria étnica, chamando a atenção para contextos sociais frágeis na área materno-infantil. Os dados sociodemográficos evidenciam precaridade na habitação, no planeamento da família, na vigilância pré-natal e nos papeis de género. A avaliação de enfermagem inicial concretizou-se em sete diagnósticos. Na criança: 1) padrão respiratório ineficaz (0032), 2) risco de glicémia instável (00179); 3) icterícia neonatal (00194); 4) risco de volume de líquidos deficiente (00028). Na mãe: 1) controle ineficaz da saúde (00078); 2) amamentação interrompida (00105); 3) disposição para tomada de decisão melhorada (00184). Definiram-se resultados esperados e intervenções de enfermagem que tiveram sucesso. A díade teve alta aos dez dias de internamento.

**Conclusão:** Programas de inclusão social e de assistência a minorias étnicas podem diminuir a morbilidade materno-infantil.

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**Conflicts of interest:** nothing to declare.

## Resumen

**Objetivo:** Este trabajo tiene el objetivo de describir los diagnósticos y las intervenciones de enfermería en el binomio madre-hijo coherentes con la situación de sepsis neonatal, mediante la aplicación de la taxonomía NANDA-I.

**Métodos:** Se trata de una investigación de tipo estudio de caso, realizada con recién nacidos internados a las 72 horas de vida en el servicio de neonatología y con su madre que lo acompañó durante la internación. Datos recolectados en diciembre de 2017. Los principios éticos fueron garantizados.

**Resultados:** El binomio vive en condición social de minoría étnica y llama la atención en contextos sociales frágiles en el área materno-infantil. Los datos sociodemográficos muestran precariedad en la vivienda, en la planificación familiar, en el control prenatal y en los papeles de género. La evaluación de enfermería inicial se realizó en siete diagnósticos. En el niño: 1) patrón respiratorio ineficaz (0032), 2) riesgo de glucemia inestable (00179), 3) ictericia neonatal (00194), 4) riesgo de déficit de volumen de líquidos (00028). En la madre: 1) gestión ineficaz de la propia salud (00078), 2) interrupción de la lactancia materna (00105), 3) disposición para mejorar la toma de decisiones (00184). Se definieron resultados esperados e intervenciones de enfermería que tuvieron éxito. El binomio recibió el alta a los diez días de internación.

**Conclusión:** Programas de inclusión social y de asistencia a minorías étnicas pueden reducir la morbilidad materno-infantil.


## Introduction

Neonatal sepsis is a systemic infection that occurs within the first 28 days of a child's life. It is caused by a pathogenic organism (i.e., bacteria, virus, fungus, parasite), which penetrates through skin continuity solution, via the respiratory, conjunctival, gastrointestinal or umbilical stump.[1-3]

Although basic sanitation, access to antenatal care or hospital infection control contribute to prevention, about 1 million newborns (NB) die each year from sepsis.[4,5] Neonatal sepsis is more frequent under poor hygiene, poor maternal education and given these characteristics, is more likely in poorly resourced populations. Neonatal sepsis is called early (EOS = early-onset neonatal sepsis) when the condition reveals within the first 72h[1] or 7 days of life[2] dominating maternal factors. The form of late sepsis (LOS = late-onset neonatal sepsis) manifests after 7 days of age, dominating nosocomial causes or by contact with the community.[1,2] Risk factors for EOS include premature or prolonged (i.e. beyond 18h) membrane rupture, preterm birth, maternal infection and low socioeconomic status.[2] In chronological terms, EOS is superimposable to the immediate postpartum, as defined by some authors, from the 1st to the 10$^{th}$ day.[3] At this stage maternal vulnerability is high given physiological changes, anxiety or maternal roles.[3,4] The initial picture of neonatal sepsis is often identified by the nurse, as are maternal problems following postpartum.

In clinical exercise, nurses use various diagnostic classifications such as Nursing Minimum Data Set (NMDS), The Omaha System, the International Classification for Nursing Practice (ICNP) or the North American Nursing Diagnosis Association (NANDA-I) taxonomy. In Portugal, given the lack of publications, the need to address the NANDA-I taxonomy stands out today. In fact, nursing education, when opening to spaces of mobility, both Lusophone and other geographical contexts, often meets the need for knowledge in this taxonomy.

According to NANDA-I, nursing diagnosis is defined through clinical judgment on the individual/family/community's response to their health problems, whether real or potential, or life processes, who need nursing care.[6] NANDA-I nursing diagnoses contribute to the clinical judgment of nurses.[3,5] They are assisted by the Nursing Intervention Classification (NIC), which refers to the treatment offered, based on judgment and knowledge, and the Nursing Outcomes Classification (NOC), which reports the definition of the results to be obtained.[6] Diagnoses are possible to apply to all users, even considering the family or relationships of high interdependence, as is the case of puerperal and NB. NANDA-I taxonomy is a decision-making methodology applicable to the situation of the mother-child dyad. Using the NANDA-NIC-NOC taxonomy in this case study aims to describe the initial assessment and proposal of nursing interventions for a mother-child dyad, who belong to the ethnic minority, face hospital and postpartum the EOS situation.

### Description of clinical case

Descriptive, qualitative study, conducted according to author model for clinical case or informal case.[7] It was based on the three initial steps reported to 1) guiding question (i.e. what is the problem); 2) identification (i.e. data collection/interview/observation);

and 3) identified problems or changes (i.e. categorization of data for diagnostic survey). Simultaneously, the current case study 4) theoretically underlies the pathophysiology and experiential context of the dyad; 5) search the literature for resolutions; 6) describes the resolutions. The seventh and last phase of the authors' model[7] is in the current case study discussion, seeking to arouse the interest of professionals and encouraging clinical reasoning.

The present study results from the direct nursing care, in an academic learning environment, for in-depth knowledge of the dyad's health/disease needs, problems and conditions, in order to unveil strategies for the problems. Study developed at a hospital in southern Portugal. The hospital unit is located in the Portuguese health system of a central hospital that offers neonatal intensive care in the region. The case was of interest to the current authors, given the socio-ethnic condition of the dyad and the lack of knowledge that emerged in the maternal figure regarding the caring roles and the proper framing in the health system. Data were collected by direct observation in the NB and by interview with the mother figure. In the process for the elaboration of the diagnoses, the situation between the two clinical nurses and the pedagogical advisor was discussed. The definition was read, its defining characteristics, as well as the related factors. The NANDA-I taxonomy was used, after data collection and clinical judgment, tracing the interventions (NIC) and expected outcomes (NOC). Regarding ethical-legal aspects, the fictitious name stratagem was used to protect the identity of the dyad and ensure confidentiality, as recommended by article 106 of the Code of Ethics (i.e., Law and Order for Nurses; Law 156/2015 of 16th September). The female NB is named baby Ana; her mother is called Maria. Consent was requested from the parental figures of the NB. This was obtained after a detailed explanation of the purpose of the study, but only in verbal format, as both parents were illiterate.

## Results

**Dyad's socio-family history**: Baby Ana is the 17-year-old son of Maria, a gypsy woman who lives in a semi-nomadic clan across southern Portugal. Seasonally, in winter, the clan settles down, next to an urban household, in makeshift housing (i.e., tent). Tent has no sanitation or electricity. Water is ordered door-to-door in the nearby neighborhood and obtained in accordance with the goodwill or not of resident neighbors.

**Mother's obstetric data**: Maria's obstetric index is (2; 0; 0, 2). First child born by caesarean section when Maria was 14 years old and companion 17 years old. During the last pregnancy, Maria went to the prenatal consultation twice and in her words, the pregnancy went well. Blood tests, in their words, had normal results. She denies collection of specimens that may be interpreted as vaginal and anal exudate for Streptococcus B identification between 35 and 37 weeks of gestation (i.e., Directorate General Health; Low-risk Pregnancy Surveillance Program (*Programa de Vigilância de Gravidez de Baixo Risco*), 2015). Maria entered the hospital with painful contractions and ruptured amniotic sac. Her statements about how long the water had been broken were not concrete and coincident at different times of data collection, although in the last reference she pointed to two hours before going to the hospital. On admission examination, she presented clear amniotic fluid. Labor that resulted in caesarean section due to non-progression.

**NB data**: After a gestation of 40S + 3d, baby Ana was born by cesarean section. Presented APGAR 9-10-10. She weighed 4,260 gr (i.e., 97-99 percentile), average of 52 cm (i.e., 95-97 percentile and 36 cm head circumference (i.e., 90th percentile). In most subsequent feeding episodes she had mixed breastfeeding, at the mother's request, because she considered that NB a) did not fit well in the breast and b) did not have enough milk (i.e., mother did not encourage the child to breastfeed). Near hospital discharge time (i.e., about 72 hours of life), the midwife nurse called the pediatrician noting that a) NB that does not look well, b) is apathetic, c) has capillary reperfusion longer than 2 seconds with plethoric skin and d) has alternating moments of tachypnea versus bradypnea. Baby Ana was transferred to the neonatology unit.

**Conducting the clinical case of baby Ana:** NB was admitted to the neonatology unit at 72 hours

of life. He was calm and without crying. Baby Ana weighed 4,220 gr (i.e. loss of 40 grams), temperature 36.8° C, pulse 90/m, breathing cycles 36/m. She had episodes of expiratory moaning, nasal flare, and peribucal acrocyanosis when fed. Urination and ejection present in the diaper of normal characteristics. It was placed in a cradle in intermediate care. She started taking antibiotics 12/12h and perOs/daily. Mixed diet with breastfeeding when visited by the mother and formula 3/3h (i.e., 50 ml). Mothers are concerned and request detailed explanations. Clinical analyzes revealed positive Polymerase Chain Reaction (PCR). Blood and urine tests have identified leukocytosis. Neonatal sepsis was diagnosed, assuming vertical transmission.

The method of work in the neonatology unit assumes family integration in care, a fact by which the diagnoses addressed the mother-child dyad. Clinical case assessment was performed by traversing the various domains of NANDA-I[8], resulting in seven diagnoses. Consider the child on Chart 1 and the parent on Chart 2.

**Chart 1.** NB care plan at the time of admission to the neonatology unit based on the NANDA-NIC-NOC taxonomy

| Domain | Nursing Diagnosis | | | NOC objectives | Intervenções - NIC |
|---|---|---|---|---|---|
| | **Newborn** | | | | |
| D4: ACTIVITY/ REST Class 4 | 00032. Ineffective breathing pattern. Inspiration an/or exhalation that does not provide adequate ventilation | Defining characteristics: | Bradypnea/Tachypnea | 0415 Respiratory State | 6890. NB monitoring: frequency; respiratory symmetry; signs of distress; noises; costal retraction; skin color;<br>3320: Oxygen Therapy (if acute): to prepare humidified O2 equipment to maintain saturation ≥90% |
| | | | Abnormal breathing pattern | | |
| | | Related factors: | Neurological immaturity | | |
| D2: NUTRITION Class 4 | 00179: Risk for unstable blood glucose level: vulnerability to variation in blood glucose/ sugar levels relative to normal variation, which may compromise health | Risk factors | Impaired physical health condition | 2300 Blood Glucose Level | 2130. Hypoglycemia management: maintain permeable intravenous route; monitor blood glucose levels; determine signs and symptoms of hypoglycemia |
| | | | Insufficient Food Intake | | |
| | | | Rapid growth period | | |
| D2: NUTRITION Class 4 | 00194. Neonatal jaundice: Yellow-orange coloration of neonate skin and mucosa that occurs after 24 hours of life as a result of unconjugated bilirubin in the circulation | Defining characteristics: | Sclerotic yellowish | 0118. Newborn Adaptation | 6924. Phototherapy: to explain to parents the procedures; eye protection; put light at 30cm; monitor eye edema; change position |
| | | | Yellow-orange skin | | |
| | | | Blood profile hemoconcentration | | |
| | | Related factors: | Age ≤7 days | | |
| | | | Poor eating pattern | | |
| D2: NUTRITION Class 5 | 00028. Risk of poor fluid volume: Vulnerability to decreased intravascular, interstitial and/or intracellular fluid that may compromise health | Risk factors: | Extremes of age | 1608: Symptom Control<br>1902: Risk Control | 4120. Fluid management: daily weight and evolution control; count diapers and weigh them; to accurate record of ingestion and disposal; to monitor hydration status (mucous membranes, pulse, blood pressure); to administer intravenous therapy; control laboratory results; to monitor nutritional status; distribute the intake within 24 hours; to encourage mother to breastfeed |
| | | | Regulatory mechanism compromised | | |

**Chart 2.** Maternal care plan at the time of admission to the neonatology unit based on the NANDA-NIC-NOC taxonomy

| Domain | Nursing Diagnosis | | | NOC objectives | NIC Interventions |
|---|---|---|---|---|---|
| | **Mother** | | | | |
| D1: HEALTH PROMOTION Class 2 | 00078. Ineffective health control: pattern of regulation and integration into daily life of a treatment regimen for disease treatment and its sequelae that is unsatisfactory to achieve specific health goals | Defining characteristics | Ineffective daily life choices to achieve health goals | 1803: Compliance Behavior | 4360. Behavior modification: fostering desirable habits; reinforce constructive decisions about health needs; facilitate the involvement of other health caregivers in the modification process<br>5240. Counseling: establish therapeutic relationship based on trust and respect; set goals; favor expression of feelings; help identify strengths and reinforce |
| | | | Failure to act to reduce risk factors | | |
| | | Related factors | Insufficient social support | | |
| | | | Healthcare complexity | | |
| | | | Economic disadvantage | | |
| | | | Family pattern of health care | | |
| D2: NUTRITION Class 1 | 00105. Interrupted breastfeeding. Breaks the continuity of milk supply to an infant or young child directly from the breasts, which may compromise breastfeeding success and/ or infant/child nutritional status | Defining characteristics | Non-exclusive breastfeeding | 1001: Breastfeeding Establishment: Maternal | 1054. Lactation Aid; teaching extraction methods |
| | | | Infant's disease | | |
| | | Related factors | Hospitalization of the child | | |
| | | | Mother-infant separation | | |
| | | | Lack of knowledge to store breast milk | | |

Continue...

Continuation.

| Domain | Nursing Diagnosis | | | NOC objectives | NIC Interventions |
|---|---|---|---|---|---|
| | **Mother** | | | | |
| D10: PRINCIPLES OF LIFE Class 3 | 00184. Willingness for improved decision-making: pattern of choosing a course of action sufficient to achieve short- and long-term health goals that can be strengthened | Defining characteristics | Expresses wish to increase risk/benefit analysis of decisions | 200014: Dignity | 5270. Provision of reassurance, acceptance, and encouragement during times of stress<br>5250. Providing information and support for a patient who is making a decision regarding health care<br>5390. Self-Awareness Enhancement |
| | | | Expresses desire to increase the coherence of decisions with sociocultural values | | |
| | | | Expresses desire to strengthen decision-making | | |

## Discussion

The clinical signs of EOS in baby Ana are in agreement with the literature. Although a systemic inflammatory syndrome occurs as a consequence of the invasion and multiplication of bacteria in the child's bloodstream, the initial picture is nonspecific. In the case of baby Ana, positive PCR and leukocytosis analytical data contributed to the suspension of discharge and hospitalization in neonatology. The variety of symptoms makes it difficult to identify cases and how diagnostic tests have little predictive ability; it is the clinic that, in the interpretation of its global, leads to the assumption of the pathology. The following discusses the NANDA-I diagnoses formulated during the admission phase to the neonatology service.

### Discussion on NANDA-I diagnoses for baby Ana

Ineffective breathing pattern (i.e., 0032): Baby Ana manifested bradypnea/tachypnea alternation and abnormal breathing pattern. Breathing difficulty is the most common manifestation in NB sepsis,[9,10] but the diagnosis 0032 is not always easy to establish. It is necessary to distinguish between adaptation to the change of tissue respiration in the uterine environment versus respiration in the atmosphere. The closing phenomena of the oval foramen and ductus arteriosus in the early days, but also cesarean birth, could mask the symptomatology of sepsis. Respiratory rate with physiological range of 30-60/m can cause difficulties in characterization. On the other hand, if there was no confinement to the birth canal, pulmonary fluid retention is common and thus transient NB tachypnea. In addition, neonatal plethora is a symptom often associated with transient tachypenia. Clinical reasoning concluded by the registration of an ineffective breathing pattern whose effortless tachypnea (i.e. silent tachypnea) is often associated with sepsis.[9, 11]

Risk for unstable blood glucose level (i.e., 00179): Fetal glucose is fed by a permanent flow of the parent, interrupting at birth. Baby Ana's macrosomia will have resulted from fetal hyperglycemia. In macrosomic babies the tendency for hypoglycemia is increased. Unstable blood glucose level occurs most frequently in the neonatal phase, being defined as plasma glucose levels ≤30mg/dl in the first 24h or ≤45mg/dl in the following days. For other authors, hypoglycemia is defined as values <40mg/dl in both term and preterm infants.[9] Risk is important to consider, as near (i.e. seizures) or long-term (i.e. neurological damage; cognitive impairment) sequels have a strong impact on the child's current and future life.

Neonatal jaundice (i.e., 00194): Neonatal jaundice is most often a physiological condition present in 40 to 60% of NBs. Due to the erythrocyte lysis, heme molecules are released which convert to bilirubin. When bilirubin levels exceed 7-8mg/dl, it becomes visible, manifesting in plethora skin and yellowish conjunctivae. However, bacterial infections lead to jaundice and so in the clinic, a distinction should be made between the typical hemolysis versus worsening or prolongation of sepsis jaundice.[9,10]

Since the child had mixed breastfeeding and jaundice occurred before the end of the first week, the possibility of breast milk jaundice is excluded. Breast milk jaundice occurs in 2-4% of preterm NB, showing increased unconjugated bilirubin. The milk from these mothers inhibits the gluconyltranferase enzyme (i.e., bilirubin-conjugating enzyme) and has a steroid metabolite (i.e., 20-betadiol) that alters the elimination of bilirubin.[9]

Risk of poor fluid volume (i.e., 00028): In distributive shock or septic shock, vasodilation occurs with consequent hypovolemia. Toxins produced by the invading microorganism lead to the release of nitric oxide (i.e. producing vasodilation) and cytokines, leading to metabolic imbalances.[10] Tissue damage caused by the invading microorganism and proinflammatory responses influence the symptomatology of sepsis. If tissue damage is large, tissue perfusion becomes ineffective. Systemic inflammatory response sharpens and vital organs risk collapse. The condition is more frequent in NB whose mother has a history of peripartum infection or prolonged rupture of membranes.[9,10]

## Discussion on NANDA-I diagnoses concerning Mother Maria

Ineffective health control (00078): ESO identification is sometimes based on the retrospective of the mother's obstetric history. In the present case, the mother's age may have been an increased risk as she was under 20 and Ana-baby is the second child. It is not known if there was an infection when Maria was 14 years old and her first child was born. However, authors report greater predisposition in women with previous infection and also in women under 20 years, given the greater vaginal colonization with group B streptococcus (GBS).[2,10] Maria would have risk factors that become cumulative.[12] In addition, non-progression of labor led to cesarean section, another predisposing factor for neonatal sepsis.[2] With cesarean delivery, the possibility of contagion by passage in the vaginal canal decreases. However, upward contamination of amniotic fluid is possible, both with intact membranes and by rupturing membranes.[2,12] Although open rupture of membranes occurred 2h before birth, far from the standard limit (i.e.,> 18h), it is unknown whether there were micro ruptures of amniotic membranes, facilitating upward infection or other factors. That is, infection could have occurred before labor, still in womb, competing for the interpretation of some authors.[13] Repeated vaginal examination to assess cervicometry increases the possibility of chorioamniotitis. The procedure is often frequent until the decision to cesarean section. In fact, if membranes rupture, the relative risk of infection by performing three or more vaginal touches grows 2 to 5 times.[12]

Interrupted breastfeeding (i.e., 00105): In the immediate postpartum phase, diagnoses related to breastfeeding difficulties are frequent.[3] In the participant, the situation is aggravated, because in case of cesarean section, there is less maternal ability to breastfeed in the first attempts.[14] This may have been the initial reason for low colostrum production. On the other hand, baby Ana had mixed feed (i.e. formula, breastfeeding breast milk, pump-extracted breast milk), a method that decreases oxytocin and prolactin production by less stimulation. It is also to be considered that in this method it decreases the withdrawal of the Feedback Inhibitor of Lactation (FIL) produced in an autocrine mechanism. Pump milk extraction may eventually act as a route of infection. There are reports of neonatal sepsis due to contamination of hands or milk extraction equipment[15] or lack of mother's body hygiene.[16] There are also authors who recognize the possibility of EOS poor hand hygiene of NB.[13,15]

Willingness for improved decision-making (i.e., 00184): child birth usually carries changes in the space that the family occupies, as well as in the interrelational processes.[3] It is verified the relation that the sociocultural status of women can have, in view of the precariousness of health and the feminine roles in the family as pointed out by some authors.[2,3] Living without sanitation carries high health risks, particularly in the neonatal period. This is recognized in a comparative study, which records a higher percentage of sepsis in gypsy children in the neonatology unit [17] and also in studies that record precarious care[18]. The fact that Ana wants to know more about her child's situation, as well as recognizing the need for vigilance in the Child Health Program (*Programa de Saúde Infantil*) promises better health and reveals the importance of considering the dyad as a care unit[18]. However, given the status of Gypsy women in the family, it will be necessary to strengthen this provision for improved decision making. Maria will be a referral mother for social support without, however, disrespecting the clan hierarchy. Some municipalities have figures of the same ethnicity who, acting as mediators, facilitate

access to health care and social integration. It should be noted that in Gypsy families, young women are limited when it comes to decision-making, which is concerted in accordance with the opinion of the leader and the family matriarch (i.e., decision to use health services for prenatal care).

In summary, the clinical picture of baby Ana improved, being discharged 10 days later. All diagnoses raised for baby Ana were closed on the 9th day of hospitalization. The diagnoses raised for Maria were closed on the day of departure, given their socio-ethnic context, there was a need for support from social services. The case of sepsis would be preventable if Maria knew about free Portuguese assistance in the pregnancy-puerperal cycle (i.e., Decree-Law 70/2000 of May 4) and if there was a closer relationship between clan versus health services. In addition to the loss of 10 days of hospitalization, in the life of the dyad and the rest of the family, in their finances and in other unaccountable ones, there was an injury to taxpayers. Costs for daily hospital stay of NB with birth weight> 2,499 g due to congenital/perinatal infections varies according to the severity of the case, between 432.25 and 1223.19 Euros/day (i.e., Ordinance 2017/2017 of 11 July), which means in the case of baby Ana an estimate of 4,320.35 to 12,230.19 Euros was totaled. Something different from the sum of 6 to 8 episodes of prenatal visit by nurse at follow-up (i.e., each home episode 33.10 Euros; Ordinance 20/2014 of January 29th) plus vehicle commuting (i.e., Decree Law 137/2010 of December 28th). Perhaps through home-based programs or by scheduling regular attendance at the health facility, the health of ethnic minorities can be enhanced with lower costs and greater health gains.

The methodological procedures in approaching participants are a limitation, as written informed consent was not obtained, as participants were unable. Such is an ethical weakness of the study. However, this weakness shows, in clinical evidence, the need to give voice to ethical minorities, who for educational, cultural or economic needs need more attention. Respecting the dignity of people, whatever their age, gender or social status, the role of nurses also lies in advocating for the most unprotected.

## Conclusion

NB had poor concrete symptoms, which is typical of EOS. The clinical picture of sepsis was achieved through signs and symptoms, clinical analysis and interpreting the obstetric history of the mother. EOS can be prevented by reducing morbidity and mortality. NANDA-I diagnoses, referring to the dyad, materialize in the child current problems and risks, as well as future risks to development. In the case of the mother, NANDA-I diagnostics essentially point to barriers rooted in gender and culture. It suggests the case that the marked family hierarchy, by having an influence on the privacy aspects of (i.e., affective and reproductive), deprives women of decision-making and leads to less access to health care. The health of procreating ethnic minorities can be enhanced. Prenatal surveillance, according to the free program of the National Health Service (SNS - *Serviço Nacional de Saúde*) in Portugal, could have offered the mother the resources and lessons for the prevention of EOS. It is important that women of reproductive age get health care information. In the case of Gypsies, the situation is particularly acute, as marriage occurs at an adolescent age, is defined by the figures of the previous generation, and early motherhood is high. In the region, clans circulate frequently and conditions need to be created for them to be healthier. They are socially fragile and they themselves create their strongholds, as the population ostracizes them. It will therefore be of interest to develop culturally congruent care programs, with particular attention to those who soon become mother-girls. We also highlight the precarious female condition in these groups. Considering the methodological aspects of approach to the case, it is necessary to recognize that the NANDA-I taxonomy is not used in the health system in Portugal. However, it is necessary to disseminate and practice it in nursing education institutions and in the clinical fields where there are students. Not only Portuguese students are future professionals to the world, but several foreign students are mobile in Portuguese universities. Case studies, being the first evidence students come across, are great ways to exercise nursing taxonomies.

## Collaborations

Urbanovská N, Pedro C and Sim-Sim MMSF contributed to the project design, data analysis and interpretation, article writing, relevant critical review of intellectual content and approval of the final version to be published.

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